

REMARKS

Formal drawings are submitted with this amendment.

The Examiner has rejected claims 1-10 under 35 U.S.C. 103(a) over Carpenter et al. (CAR) in view of Thalhammer-Reyero (TR). The Examiner has cited CAR for disclosing a method for simulating a dynamic system with a plurality of interacting nodes in a network with a transformation of inputs and a transformation of outputs. The Examiner contended that CAR shows a measurable ratio of input transformation rate to output transformation rate, citing Col. 11, lines 34-61, and an activated state corresponding to an excess measurable ratio of input transformation rate to output transformation rate and an activated state corresponding to a deficit measurable ratio to of input to output and transient storage of a product of the input, citing Col 24, lines 1-67, Col. 25, lines 1-62 and Col. 26, lines 1-62. Thalhammer-Reyero U.S. Patent Number 5,930,154 has been cited for supposedly teaching a node having balanced state and activated states as recited in the present claims.

The Applicant respectfully traverses the rejection. The Applicant submits that the Examiner has misinterpreted the claimed invention and improperly combined references. The Applicant finds it difficult to address each of the issues point by point as raised by the Examiner, since the language extracted by the Examiner from the Applicant's claims does not appear to relate to the cited sections of the applied references. The Applicant respectfully observes that the Examiner cannot properly apply the language of the Applicant's own claims to read on the description in the prior art, since the prior art lacks any suggestion of use of any critical points relating to measurable ratios of inputs and outputs of a dynamic system, let alone a hierarchy of universal modules of object process descriptions. There is nothing in CAR to suggest either an excess measurable ratio or a deficit measurable ratio of input and output.

TR is merely a generalized simulation tool that represents itself as being able to use anything previously invented or that could be invented. The present invention might be useful in a TR system, but nothing in the TR system suggests the present invention. The present invention describes and claims a novel methodology wherein the interaction of the inputs and the outputs is controlled by two different measurable ratios (which can be, as noted in claim 2, referenced to external sources): one excess ratio and one deficit ratio.

The CAR reference describes a linear filter which accounts for expected nonlinearities caused by the interaction of the inputs with other cellular factors (but not the output) in a nonlinear environment (a neural network) by providing a weighting factor for the input signal that allows downstream events (affected by the output) to be treated as linear events. In CAR, the weighting factor merely establishes the relationship between the values of an input and an output, and is thus at most a signal ratio system. There is nothing about two different types of ratios (in the context of CAR, this would evidently mean two different types of weighting factors). The CAR reference would not lead one of ordinary skill in the art to combine TR, a simulation tool kit, to arrive at the present invention.

TR, in its exemplary use of kinetic parameters, would be specifically distinguished from the present invention, since the present invention does not rely on kinetic parameters and the vast computational resources needed to realize such a simulation. The present invention employs the mechanism of critical points in a thermodynamic system. The present invention uses hierarchical state analysis for its analysis, control and simulation. Critical points simplifies simulation. By contrast, TR discloses a form of rate analysis for simulation, and rate analysis does not contemplate critical points. The Examiner has evidently misread TR Col. 13, lines 27-67 to Col. 14 lines 1-56. See for example Col. 13, lines 43-61, which specifically teaches away from the present invention.

Applicant: Fredric S. Young
Application Serial No. 09/401,681
Page 9

The Applicant believes that there is no need to submit any substantive amendments to the existing claims. In addition, the Applicant has submitted a new claim based on the present specification wherein the present invention is articulated from a slightly different perspective, namely the method for simplifying the analysis, synthesis and control of a complex system. This claim is supported by language on page 2 line 24 through page 3 line 13 of the present specification, among other parts of the specification. This method would have utility as an element in a control system, as well as in a wide variety of other physical, biological and pharmaceutical systems, either in actual control or in simulation environments.

CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

In order to expedite the application, the Applicant Dr. Young invites the Examiner to call the undersigned attorney to arrange for a telephone conference with the Applicant to obtain a greater appreciation of the present invention. Please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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